cited glaſs tube, held under the balls of *A*, their repulſion will be increaſed: but if the tube be brought, in the ſame manner, towards the balls of *B*, their repulſion will be diminiſhed.

In the fifth experiment, the common ſtock of electrical matter in the tin tube, is ſuppoſed to be attenuated about the middle, and to be condenſed at the ends, by the repelling power of the atmoſphere of the excited glaſs tube, when held near it. And perhaps the tin tube may loſe ſome of its natural quantity of the electrical fluid, before it receives any from the glaſs; as that fluid will more readily run off from the ends or edges of it, than enter at the middle: and accordingly, when the glaſs tube is withdrawn, and the fluid is again equally diffuſed through the apparatus, it is found to be electrified negatively: For excited glaſs brought under the balls will increaſe their repulſion.

In the ſixth experiment, part of the fluid driven out of one tin tube enters the other; which is found to be electrified poſitively, by the decreaſing of the repulſion of its balls, at the approach of excited glaſs.

EXPERIMENT VII.

Let the tin tube, with a pair of balls at one end, be placed three feet at leaſt from any part of the room, and the air render'd very dry by means of a fire: electrify the apparatus to a conſiderable degree; then touch the tin tube with a finger, or any other conductor, and the balls

will, notwithſtanding, continue to repel each other; tho' not at ſo great a diſtance as before.

The air ſurrounding the apparatus to the diſtance of two or three feet, is ſuppoſed to contain more or leſs of the electrical fire, than its common ſhare, as the tin tube is electrified poſitively, or negatively; and when very dry, may not part with its overplus, or have its deficiency ſupplied ſo ſuddenly, as the tin; but may continue to be electrified, after that has been touch'd for a conſiderable time.

EXPERIMENT VIII.

Having made the Torricellian vacuum about five feet long, after the manner deſcribed in the *Philoſophical Tranſactions*, Vol. xlvii. p. 370. if the excited tube be brought within a ſmall diſtance of it, a light will be ſeen through more than half its length: which ſoon vaniſhes, if the tube be not brought nearer; but will appear again, as that is moved farther off. This may be repeated ſeveral times, without exciting the tube afreſh.

This experiment may be conſider'd as a kind of ocular demonſtration of the truth of Mr *Franklin*'s hypotheſis; that when the electrical fluid is condenſed on one ſide of thin glaſs, it will be repelled from the other, if it meets with no reſiſtance. According to which, at the approach of the excited tube, the fire is ſuppoſed to be repelled from the inſide of the glaſs ſurrounding the vacuum, and to be

carried

BENJAMIN FRANKLIN *Experiments and Observations on Electricity* LONDON, 1751 THE WARNOCK LIBRARY Octavo